EXHIBIT CC

ZATARAIN III

EXPERT REPORT OF ARTHUR ZATARAIN IN OPPOSITION TO
FEBRUARY 24, 2012 DECLARATION OF RICHARD HOOPER

MARCH 23, 2012

**IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF WISCONSIN**

ROCKWELL AUTOMATION, INC. and
ROCKWELL AUTOMATION TECHNOLOGIES, INC.,

                    Plaintiffs,

v.   Case No. 10-CV-718-WMC

WAGO CORPORATION and
WAGO KONTAKTTECHNIK GmbH & CO. KG,

                    Defendants.

**EXPERT REPORT OF ARTHUR ZATARAIN IN OPPOSITION
TO FEBRUARY 24, 2012 DECLARATION OF RICHARD HOOPER**

1.   I, Arthur Zatarain, have been retained by Plaintiffs Rockwell Automation, Inc.

and Rockwell Automation Technologies, Inc. ("Rockwell") as a technical expert consultant and

potential testifying expert witness in this lawsuit filed against WAGO Corporation and WAGO

Kontakttechnik GmbH & Co. KG. In this report, unless the context requires that I specify a

particular Defendant, I will refer to both WAGO Corporation and WAGO Kontakttechnik GmbH

& Co. KG ("WAGO Germany") collectively as "WAGO."

2.   I submitted a report on February 24, 2012 relating to infringement and related

issues (the "Opening Expert Report"), the entirety of which is incorporated herein by reference.

On March 2, 2012, I submitted a supplement to my Opening Expert Report (the "Supplement"),

the entirety of which is incorporated herein by reference.

3.   I am a licensed electrical and control systems engineer with over 30 years

experience in technical areas relevant to the patents in dispute. Details of my credentials and

experience are included in my Opening Expert Report.

4.   I understand that I am submitting this report in compliance with the requirements of Rule 26 of the Federal Rules of Civil Procedure and the Court's scheduling order. I prepared all aspects of this report with assistance on legal aspects, citations, and formatting provided by Plaintiffs' counsel; however my opinions addressed herein are my own.

5.   In this report I have been asked to provide my opinions concerning Dr. Richard Hooper's ("Hooper") February 24, 2012 declaration ("Hooper Dec."), including but not limited to, (1) the patents in suit and their prosecution history; (2) the field of art of the patents in suit; (3) the state of the art at the time of the filing of the applications for the patents in suit; (4) the level of ordinary skill in the art at the time of the filing of the applications for the patents in suit; and (5) the validity of the patents in suit. Some of this material was covered in my Opening Expert Report and in the Supplement, and is incorporated by reference herein.

6.   I have formed the opinions expressed in this report through my independent evaluation and analysis. The opinions contained in this report are my own. If asked to testify at a deposition or hearing in this litigation, I have personal knowledge of the contents of this report and I can competently testify on the subjects described herein. I may also present a technical tutorial regarding the teachings to the patents in suit and related technologies. I will also testify at trial on behalf of Plaintiffs if asked by Plaintiffs to do so.

7.   The materials I have considered in formulating my opinions are set forth in Exhibit A to this report. I note that in preparing this report I have also relied upon my education and experience, and the knowledge I have accumulated in the course of my over 30 years working with technology related to the patents in suit.

8.   I reserve the right to supplement or modify this report and/or my testimony in response to any judicial determinations, additional discovery, the opinions expressed by

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WAGO's expert, any additional evidence or testimony presented at any deposition, hearing or trial that is brought to my attention after the date of this report, and/or my continuing research and investigation in this litigation. I expect to continue my review, evaluation, and analysis of information relating to this litigation.

9.   I note that Hooper's opinions and citations, in many instances, differ from the invalidity positions taken in WAGO's invalidity contentions and supplements. To the extent WAGO asserts an invalidity position that is different from the position taken in Hooper's declaration, I reserve the right to provide additional opinions and testimony on WAGO's position(s).

10.   I further reserve the right to provide additional opinions and testimony as requested by Plaintiffs' counsel.

MY OPINIONS

11.   I have been asked to express opinions regarding the validity of asserted claims of the patents in suit. In particular, I have been asked to render opinions regarding whether or not WAGO has established that the asserted claims are invalid pursuant to the requirements of sections 102 (anticipation), 103 (obviousness), 112 paragraph 1 (written description and enablement) and 112 paragraph 2 (definiteness) of the Patent Statute (35 U.S.C.).

12.   I am not an attorney. Thus, for the purposes of this report, I have been informed about certain aspects of patent law that are relevant to my analyses and opinions.

A.   The "Person of Ordinary Skill in the Art"

13.   The level of skill of the person having ordinary skill in the art ("PHOSITA") at the time the inventions were made is the same as what was used to understand the claim

language of the asserted patent in my Opening Expert Report. Please refer to my Opening

Expert Report.

14.   It is my opinion that a PHOSITA during the time of the filing of the patent

applications (2000-2002) would likely:

> a. have a bachelor's degree (or equivalent practical experience) in
>
>   engineering, computer science, or a related field;
>
> b. be capable of designing and operating hardware and software, and also
>
>   related communications and support equipment, used for networked
>
>   programmable industrial control applications; and
>
> c. have at least five years of experience working with automated process
>
>   controls, industrial controls, and integrated systems.

15.   My opinion regarding a PHOSITA is based on my 30+ years of experience

developing hardware and software for equipment and systems closely related to the patents in

dispute. My opinion is also based on study of the patents at issue, their prosecution histories,

documents produced, the information publicly available on WAGO's websites, testimony given

during depositions in this lawsuit, my examination and testing of the WAGO products, the

materials listed in Exhibit A and other information identified in this report and my Opening

Expert Report and Supplement.

16.   I note that Hooper's definition of PHOSITA, while not identical, is not

significantly different from my definition. For the purposes of this report I adopt both

definitions.

B.   Claim Construction

17.   Please refer to my Opening Expert Report.

18.   It is my understanding that the parties have exchanged lists of claim terms that each party contends require interpretation, and the parties have exchanged their respective positions about, and support for, how the various claim terms should be interpreted. I have reviewed the following related documents:

      a.   "Plaintiff's Preliminary Proposed Claim Constructions" and "Exhibit A to Plaintiff's Preliminary Claim Constructions;"

      b.   "Defendants' List of Claim Terms and Proposed Constructions;"

      c.   "Plaintiffs' Amended Preliminary Proposed Claim Constructions" and "Exhibit A to Plaintiff's Amended Preliminary Claim Constructions;" and

      d.   Defendants' Responses and Objections to Plaintiffs' Third Set of Common Interrogatories along with Exhibit A.

19.   I have been informed by counsel for Rockwell that in construing claims, the intrinsic evidence of record, including the claims of the patent, the written description, and the prosecution history should be consulted. I should begin with the language of the claims and, in general, there is a heavy presumption in favor of the ordinary meaning of claim language as understood by one of ordinary skill in the art. It is also my understanding that this presumption may be overcome where examination of the specification, prosecution history, and other claims indicates that the inventor intended otherwise.

20.   To the extent the Court adopts a specific claim construction that differs from one that I used for my opinion herein, I reserve the right to supplement the opinions contained herein.

21.   As the result of my education and experience, I believe that I understand how the asserted claims of the asserted patents would be understood by a PHOSITA. I have applied these claim construction principles outlined above.

C.   Proof Needed for Invalidity

22.   I understand that an issued patent is presumed to be valid. I also understand that a patent may be determined to be invalid based on so-called "prior art," as described in 35 U.S.C. sections 102 or 103, or for other reasons.

23.   I have been informed that establishing a patent or patent claim to be invalid requires proof by "clear and convincing evidence." I understand that "clear and convincing evidence" is evidence that would cause a trier of fact to be persuaded that the fact sought to be proved is substantially more likely than not to be true. Proving a fact by "clear and convincing" evidence is higher burden than proving a fact by a "preponderance of the evidence" but lower than "beyond a reasonable doubt."

24.   I have been informed that a party that is attempting to establish the invalidity of a patent or patent claim, here WAGO, carries the burden of proof.

25.   I have been informed that in determining validity, a claim must be construed to uphold its validity if possible.

26.   I have been informed of the principle of conservation of claim validity, which is that a claim should not be interpreted to read on the prior art, because such an interpretation would invalidate the claim. In other words, claims should be read in a way that avoids ensnaring prior art if it is possible to do so.

D.   Anticipation

27.   I have been informed that to anticipate a patent under 35 U.S.C. § 102, a reference must describe each and every claim limitation and enable one of skill in the art to make the invention without undue experimentation. This must be established by clear and convincing evidence.

28.   I have been informed that to find anticipation, each and every limitation recited in a claim must be found in one item of prior art, either expressly or inherently, and arranged in the item of prior art in the same way as it is claimed, so that the disclosure effectively puts the public in possession of the invention. In other words, in order to anticipate, a document must disclose all of the elements claimed and also disclose all of the elements arranged or combined in the same way as recited in a claim. A difference, however slight, invokes a question of obviousness, not anticipation.

29.   I have been informed that references that are ambiguous as to the presence or description of a particular claim element, as a matter of law, cannot anticipate a claim.

30.   I understand that a prior publication must contain a full enabling disclosure in order to anticipate a patent claim. In other words, the description and drawings must contain and exhibit a substantial representation of the claimed invention, in such full, clear, and exact terms as to enable a PHOSITA to make, construct, and practice the invention; mere vague and general representations will not suffice for anticipation.

31.   I have been informed that prior art will be considered anticipatory if it sufficiently describes the claimed invention to have placed the public in possession of it. Such possession is effected if one of ordinary skill in the art could have combined the publication's description of the invention with his own knowledge to make the claimed invention. Accordingly, even if the claimed invention is disclosed in a printed publication, that disclosure will not suffice as prior art if it is not enabling, i.e. sufficient to enable a PHOSITA to reduce the disclosed invention to practice without undue experimentation.

E.   Obviousness

32.   I understand that a patent claim may be invalid as "obvious" (under 35 U.S.C. § 103 of the patent law) if it is established by clear and convincing evidence that the invention as a whole would have been obvious to a person of ordinary skill in the art at the time the invention was made.

33.   I understand that a claim may be invalid under § 103 if the matter described by the claim as a whole would have been obvious to a hypothetical person of skill in the art in view of a prior art reference or in view of a combination of references at the time the claimed invention was made. Therefore, I understand that obviousness is determined from the perspective of a hypothetical person of skill in the art and that the asserted claims of the patent should be read from the point of view of such a person at the time of the claimed invention. A hypothetical person of skill in the art is assumed to know and to have access to all relevant prior art in the field.

34.   I also understand that an analysis of whether a claimed invention would have been obvious should be considered in light of the scope and content of the prior art, the differences (if any) between the prior art and the claimed invention, and the level of ordinary skill in the pertinent art involved (at the time the invention was made). I also understand that a prior art reference should be viewed as a whole. I also understand that a prior art reference may teach away from a claimed combination. A prior art reference teaches away from a claimed combination when its teachings undermine the reason being proffered as to why a person of ordinary skill in the art would have combined the known elements in the alleged manner. I also understand that in making an obviousness determination, it is important to avoid hindsight bias and to be cautious of arguments that rely upon *ex post* ("after the fact") reasoning.

35.   Obviousness cannot be proven merely by showing that a claimed invention is a combination of elements that were already previously known in the prior art, as nearly all inventions employ such combinations of previously known elements. Rather, obviousness requires the additional showing that a person of ordinary skill at the time of the invention would have selected and combined those prior art elements in the normal course of research and development to yield the claimed invention. A person of ordinary skill at the time of the invention interprets the prior art using common sense and appropriate perspective. Teachings from prior art, suggestions beyond the literal teachings of those art references, or even motivations from the store of common knowledge of one of ordinary skill in the art provide the sources of evidence that an ordinary skilled artisan might have found and used at the time of the invention.

36.   To render a claim obvious, prior art cannot be vague and must collectively, although not explicitly, guide an artisan of ordinary skill towards a particular solution.

37.   I have been informed that the United States Supreme Court clarified the legal principles governing obviousness. I understand that, in considering whether an invention for a claimed combination would have been obvious, I may assess (1) whether there are apparent reasons to combine known elements in the prior art in the manner claimed in the patent in view of interrelated teachings of multiple prior art references, (2) the effects of demands known to the design community or present in the marketplace, and/or (3) the background knowledge possessed by a PHOSITA.

38.   I also have been informed that, in determining whether a claimed invention would have been obvious, one should consider, if present, certain secondary considerations such as (1) satisfying a long-felt but unresolved need in the market, (2) commercial success, (3) the failure

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of others, (4) unexpected results or success, (5) approval in the relevant scientific community or

market, and (6) copying. I further understand that there must be a "nexus" between the claimed

invention and any secondary consideration.

39.   I understand that the use of such factors above helps to guard against the tendency

to regard inventions as "obvious" simply because their operations are readily understood -- that

is, once the inventor has provided the solution. Such comprehensibility, along with the

familiarity of an invention that becomes used widely, and easily copied, can obscure the bold

thinking that gave rise to the invention in the first place.

    F.   **35 U.S.C. section 112**

40.   I understand the written description and enablement requirements are set forth in

35 U.S.C. §112, ¶ 1. This section provides:

> The specification shall contain a written description of the invention, and of the manner
> and process of making and using it, in such full, clear, concise, and exact terms as to
> enable any person skilled in the art to which it pertains, or with which it is most nearly
> connected, to make and use the same, and shall set forth the best mode contemplated by
> the inventor of carrying out his invention.

41.   I understand the definiteness requirement is set forth in 35 U.S.C. §1 12, ¶ 2. This

section provides:

> The specification shall conclude with one or more claims particularly pointing out and
> distinctly claiming the subject matter which the applicant regards as his invention.

        a.   ***35 U.S.C. section 112 paragraph 1 - Written Description***

42.   I understand that, for a patent to meet the written description requirements for

patentability, it must describe the claimed invention with reasonable clarity so that a person of

ordinary skill in the relevant art would understand that the inventor possessed the claimed

invention at the time the patent application was filed or, if claiming any earlier priority date, at

the time the priority application was filed. I have been informed that the test for sufficiency of a written description is whether the disclosure, *i.e.,* specification and claims, clearly allows a person of ordinary skill in the art to recognize that the inventor invented what is claimed. Possession means possession as shown in the disclosure, and requires an objective inquiry into the four corners of the specification from the perspective of a person of ordinary skill in the art. The specification need not describe word for word what is in the claims, and original claims are part of the specification.

b. *35 U.S.C. section 112 paragraph 1 - Enablement*

43.   It is my understanding that, to be enabling, the specification should teach a person of ordinary skill in the art how to make and use the claimed invention without undue experimentation. A patent need not expressly state information that a skilled person would be likely to know or could obtain from what was well known in the art.

44.   It is also my understanding that a reasonable amount of routine experimentation required to practice a claimed invention does not preclude the specification from being enabling. I further understand that determining whether the amount of experimentation needed is undue is subject to a reasonableness standard regarding the nature of the invention and the state of the art. A determination of whether the amount of experimentation is undue is a fact-specific inquiry. I understand that a considerable amount of experimentation is permissible if it is merely routine, or if the specification in question provides a reasonable amount of guidance with respect to the direction in which the experimentation should proceed. It is my further understanding that the following factors can be considered in evaluating whether a disclosure requires undue experimentation, as opposed to a reasonable amount of routine experimentation:

44.1. The quantity of experimentation necessary;

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44.2. The amount of direction or guidance presented;

44.3. The presence or absence of working examples;

44.4. The nature of the invention;

44.5. The state of the prior art;

44.6. The relative skill of those in the art;

44.7. The predictability or unpredictability of the art; and

44.8. The breadth of the claims.

45.   I have been informed that the omission of minor details about the claimed invention, or the process or manner of making and using the claimed invention, does not make the specification non-enabling. Disclosure of starting material or the conditions under which a process can be carried out is sufficient to be enabling and does not show that undue experimentation is required.

c.   *35 U.S.C. section 112 paragraph 2 - Definiteness*

46.   I have been informed that a party arguing that a claim term is indefinite must show that one skilled in the art would not understand the scope of the claim in which the term appears when read in light of the specification. The purpose of the definiteness requirement is to ensure that the claims delineate the scope of the invention using language that adequately notifies the public of the patentee's right to exclude. A claim is considered indefinite when it is not amenable to construction or is insolubly ambiguous, and is indefinite only if reasonable efforts at construction of the claim would prove futile.

47.   I have been informed that the definiteness requirement does not compel absolute clarity. Because only claims not amenable to construction or insolubly ambiguous are indefinite, the definiteness of claim terms depends on whether those terms can be given any reasonable meaning. I have been further informed that a difficult issue of claim construction does not

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automatically result in a holding of indefiniteness. Specifically, if the meaning of a claim term is discernible, even though the task may be formidable and the conclusion may be one over which reasonable persons will disagree, the claim may be sufficiently clear to avoid invalidity on indefiniteness grounds. I have been instructed that, when considering indefiniteness, general principles of claim construction apply.

G.   Opinions Regarding Hooper's Analysis of the Asserted Claims

48.   Since there are no claims relating to U.S. Patent Nos. 6,745,090 and 7,058,461 being asserted in this lawsuit, I do not provide any opinions about them herein. I reserve all right to provide opinion at a later time should issues relating to these patents arise in this lawsuit.

49.   It is my opinion that Hooper has failed to present clear and convincing evidence that any of the claims of the asserted patents are invalid.

50.   It is my opinion that Hooper has failed to present clear and convincing evidence that any of the claims of the asserted patents are anticipated and/or obvious in view of the cited art.

51.   It is my opinion that Hooper has failed to present any evidence that any of the claims of the asserted patents are invalid for indefiniteness, for lack of enablement, or for lack of written description.

52.   It is my opinion that Hooper has failed to present any evidence or opinions on issues of claim construction.

53.   It is my opinion that the asserted claims of the asserted patents are valid and enforceable under 35 U.S.C. § 102, 35 U.S.C. § 103, 35 U.S.C. § 112 and all other applicable statues and regulations.

54.   It is my opinion that Hooper has not identified a single reference that sufficiently describes each and every element of any of the asserted claims such that a PHOSITA could have combined the reference with his knowledge to make the claimed invention.

55.   It is my opinion that Hooper provides no evidence or analysis whatsoever as to why a person of skill in the art would have modified or combined the elements of the cited references to reach any of the asserted claim of the inventions in this lawsuit.

56.   It is my opinion that Hooper never once provides any reason, teaching, suggestion, or motivation that would have prompted a PHOSITA at the time of the invention to have modified or combined the references he cites. Hooper also never provides any reason why a PHOSITA would have selected and combined those prior art elements in the normal course of research and development to yield the claimed invention. Further, Hooper does not provide any analysis as to how or why one of ordinary skill in the art would combine two or more specifically identified references that would render obvious any asserted claim.

57.   Further, it is my opinion that Hooper fails to provide any apparent reasons to combine known elements in the prior art in the manner claimed in the patent in view of interrelated teachings of multiple prior art references or the effects of demands known to the design community or present in the marketplace.

58.   I currently hold the opinions set forth herein. As my study of the case continues, I may acquire additional information and/or attain supplemental insights that result in added observations. I reserve the right to supplement this report and rely on additional information that comes to my attention between now and the time of my testimony.

PATENTS IN SUIT

1.   U.S. Patent No. 6,745,232

59.   See descriptions in Opening Expert Report.

60.   The '232 patent discloses a new method and system for accomplishing program suspension and stepwise execution of functions in a control device. This improvement provides the power and convenience of software debugging along with the real-time operating environment and input-output facilities of the target system. The method and system operate by exchanging specific types of messages over a communications medium between a development system and a target computer. The messages are used to set stopping points, control program execution, and provide access to data within the target computer.

61.   Based on all of my 30+ years of experience in this field, I am unaware of any prior art systems or references, at the time of the invention, that disclosed the methods and systems described in the '232 patent.

Hooper's Analysis of the claims of the '232 Patent

62.   In his declaration, Hooper steps through 7 different claims of the '232 patent, each of which has a different scope, and opines generally that "[t]he analysis shows all of the claim limitations to be met by either by a single piece of prior art, or by combining pieces of prior art. When combining pieces of prior art, I have applied elements according to their known function and described the predictable results of their combination." (Hooper Dec., ¶ 150). It is unclear from this whether Hooper is asserting that each claim is invalid for anticipation, for obviousness, or for both. Therefore, in this report I address only those assertions and combinations explicitly made in Hooper's declaration that are accompanied by Hooper's

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analysis. I reserve the right, however, to supplement and amend my opinions should Hooper amend, clarify, or supplement his invalidity contentions.

63.   As I detail below, it is my opinion that all of the asserted claims are valid over the references cited by Hooper, individually, together, or in combination.

Hooper's Analysis of Claims 1, 2, 3, 5, 10, 11 and 14 of the '232 Patent

64.   Hooper's invalidity analysis of the asserted Claims 1, 2, 3, 5, 10, 11 and 14 of the '232 Patent appear to be limited to arguments of anticipation of the claims by a CoDeSys reference that purports to be from 1997 ("CoDeSys"), and a LabVIEW RT reference that purports to be from 1999 ("LabVIEW").

65.   Hooper's declaration provides no evidence and does not opine on any claim construction issues of the '232 patent.

66.   Hooper's invalidity analysis of the '232 patent fails to provide any substantive analysis regarding the alleged anticipation (or obviousness), but instead limits Hooper to generic opening assertions followed by copying sections of text and figures from the CoDeSys and LabVIEW references. In light of the ambiguities and general unclarity of Hooper's declaration, I avoid speculating on his positions.

67.   Further, Hooper's invalidity analysis of the '232 patent fails to provide any obviousness arguments.

68.   Hooper's analysis fails to provide any explanation why a PHOSITA would have a reason, teaching, suggestion or motivation to combine multiple cited references. Hooper also failed to provide any explanation how or why a PHOSITA would have selected and combined those prior art elements in the normal course of research and development to yield the claimed invention.

Hooper's Analysis of the CoDeSys Reference

69.   Hooper makes a general allegation that the CoDeSys reference "discloses every element of Claim[s] [1-3, 5, 10, 11 and 14] of the '232 Patent." (Hooper Dec., ¶¶ 151, 170, 175, 182, 187, 192 and 197). I disagree.

70.   It is my opinion that the CoDeSys reference does not anticipate or render obvious any of the asserted claims of the '232 patent.

71.   Claims 1-3, 5, 10, and 11 require that "the control device receives a message from a communications medium." The cited CoDeSys references provided by Hooper do not disclose the control device receiving a message from a communications medium. Hooper's citations to "serial port cable" and "serial interface" point to a physical communications medium that does not disclose the "message" required by the claims.

72.   Claims 1-3, 5, 10, and 11 require that "the message includes instructions to suspend execution of the stored program at a particular location of the stored program." However, the cited CoDeSys reference does not disclose a message to suspend execution of the stored program at a particular location in a stored program.

73.   Claims 1-3, 5, 10, and 11 require "executing at least a portion of the stored program in the control device according to the instructions." The cited CoDeSys reference does not disclose executing a portion of a stored program according to instructions contained in a message.

74.   Claims 1-3, 5, 10, and 11 require "suspending execution of the stored program according to the instructions." The cited CoDeSys reference does not relate to suspending execution according to instructions related to suspending execution at a particular location in the stored program.

75.   Claims 1-3, 5, 10, and 11 further require "receiving a mode change message with instructions therein to execute the stored program in a step mode from the location in which the program was suspended." Hooper argues that this limitation is disclosed in the CoDeSys reference on page 60 through the "Online Step Over" and "Online Step Into". (Hooper Dec., ¶ 168). I disagree. The cited CoDeSys reference does not disclose receiving a message.

76.   Claim 2 requires "repeating executing the at least a portion of the stored program and suspending execution of the stored program, in response to another message from the communications medium." Hooper argues that this limitation is disclosed in the CoDeSys reference on page 60 through the "Online Single Cycle." (Hooper Dec. ¶ 173). I disagree. The cited CoDeSys reference does not disclose use of a message on a communications medium. Also, the "Online 'Single Cycle'" command in CoDeSys starts and stops execution at the end of one entire PLC cycle (or may also stop when reaching a breakpoint). Running a PLC cycle from start to finish is different than the claimed, "repeating executing the at least a portion of the stored program and suspending execution." The processes appear to differ, and any correspondence is unclear, at least because CoDeSys' Online Single Cycle command executes and suspends differently than its Online Step Over and Online Step In commands, which Hooper cites against the base independent claim which determine "the at least a portion of the stored program and suspending executing."

77.   Claim 3 requires "providing data to the communications medium in response to a data request message from a network while execution of the stored program is suspended." Hooper argues that this limitation is disclosed in the CoDeSys reference on page 119 of the user's guide, through "'Extras' 'Read Trace'" and through a "read" of the logic controller's trace buffer. (Hooper Dec., ¶ 178). I disagree. The cited CoDeSys reference does not disclose that the

transfer of trace buffer data can occur when execution of the stored program is suspended. Further, the reference does not disclose responding to a message. Moreover, Hooper asserts that "one of ordinary skill in the art would have understood that buffer reads are available both when the program is executing and when the program is suspended." (Hooper Dec., ¶ 179). However there is no disclosure of this at all in the CoDeSys reference. Hooper's assertion appears to be a bare application of impermissible hindsight using the '232 invention to suggest features that are not otherwise disclosed in the CoDeSys reference.

78.   Claims 5, 10 and 11 require "wherein the mode change message further comprises a step type, and wherein executing the at least a portion of the stored program and suspending execution of the stored program are done according to the step type." Hooper argues that this limitation is disclosed in the CoDeSys reference at page 60 via the "'Online' 'Step Over'" and "'Online' 'Step In'", which "are two step types that execute and then suspend execution of the stored program." He further argues with "'Online' 'Single Cycle'" that "steps through one cycle of the program." I disagree with Hooper's analysis. The cited CoDeSys reference does not disclose the use of mode change messages. Also, CoDeSys doesn't disclose that the suspending execution is done according to the step type.

79.   Claim 10 requires "repeating executing the at least a portion of the stored program and suspending execution of the stored program, in response to another message from the communications medium." Hooper argues that this limitation is disclosed in the CoDeSys reference via the "'Online' 'Single Cycle'". I disagree. The cited CoDeSys reference does not disclose the use of messages. Also, the "Online 'Single Cycle'" command in CoDeSys starts and stops execution at the end of one entire PLC cycle (or may also stop when reaching a breakpoint). Running a PLC cycle from start to finish is different than the claimed, "repeating

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executing the at least a portion of the stored program and suspending execution." The processes appear to differ, and any correspondence is unclear, at least because CoDeSys' Online Single Cycle command executes and suspends differently than its Online Step Over and Online Step In commands, which Hooper cites against the base independent claim which determine "the at least a portion of the stored program and suspending executing."

80.	Claim 11 requires "providing data to the communications medium in response to a data request message from the network while execution of the stored program is suspended." Hooper argues that this limitation is disclosed in the CoDeSys reference via the "Extras Read Trace" and that "one of ordinary skill in the art would have understood that buffer uploads are available when the program is executing and when the program is suspended in step mode." I disagree. The cited CoDeSys reference does not disclose the use of data request messages. Also, it does not disclose that the transfer of trace buffer data can occur when execution of the stored program is suspended. Moreover, Hooper provides no basis for his statement regarding PHOSITA understanding the availability of buffer uploads during execution and suspension.

81.	Claim 14 requires "providing a control device that selectively executes a program and receives messages from a network." However, the CoDeSys reference provided by Hooper does not disclose the control device receiving any relevant "messages" from a network.

82.	Claim 14 further requires "receiving a mode change message from the network." However, the CoDeSys citation provided by Hooper does not disclose mode change messages.

83.	Claim 14 further requires "suspending execution of the program according to the mode change message." However, the CoDeSys citation provided by Hooper does not disclose mode change messages. Also, the reference does not disclose a mode change message that suspends execution of the program.

84.   Claim 14 further requires "receiving a step command message from the network." However, the CoDeSys citation provided by Hooper does not disclose step command messages.

85.   Claim 14 further requires "executing at least a portion of the program in the control device according to the message." However, the CoDeSys citation provided by Hooper does not disclose the use of messages.

86.   Claim 14 further requires "suspending execution of the program according to the message." However, the CoDeSys citation provided by Hooper does not disclose the use of messages. Also, it does not disclose suspending execution according to a command message.

87.   As detailed above, in my opinion, the CoDeSys references, as cited by Hooper, fail to disclose each and every element of any of the asserted claims of the '232 Patent and/or does not sufficiently describe the claimed invention to have placed the public in possession of it. A PHOSITA at the time of the invention could not have combined the CoDeSys reference with his own knowledge to make the claimed invention.

88.   In my opinion, the CoDeSys references cited by Hooper do not contain any disclosure sufficient to enable a PHOSITA to practice the inventions claimed in the '232 patent without undue experimentation. The citations to the CoDeSys reference contain no substantive representation of the claimed invention in such, full, clear, and exact terms as to enable a PHOSITA to make, construct, and practice the invention.

89.   The citations by Hooper are ambiguous as to the presence or description of the claim elements and thus the CoDeSys reference does not suffice for anticipation.

Hooper's Analysis of the LabVIEW Reference

90.   Hooper makes a general allegation that the LabVIEW reference "discloses every element of Claim[s] [1-3, 5, 10, 11 and 14] of the '232 Patent." (Hooper Dec., ¶¶ 152, 171, 176, 183. 188, 193 and 198). I disagree.

91.   It is my opinion that the LabVIEW reference does not anticipate or render obvious any of the asserted claims of the '232 patent.

92.   In my opinion, the LabVIEW references cited by Hooper (discussed below) fail to disclose each and every element of any of the asserted claims of the '232 Patent and/or do not sufficiently describe the claimed invention to have placed the public in possession of it. A PHOSITA at the time of the invention could not have combined the teachings of the LabVIEW references with his own knowledge to make the claimed invention.

93.   Like the CoDeSys reference, the LabVIEW references relied upon by Hooper do not contain any disclosure sufficient to enable a PHOSITA to practice the inventions claimed in the '232 patent without undue experimentation. The citations to the LabVIEW references contain no substantive representation of the claimed invention in such, full, clear, and exact terms as to enable a PHOSITA to make, construct, and practice the invention.

94.   The citations are vague and ambiguous as to the presence or description of the claim elements and thus do not suffice for anticipation.

95.   Moreover, the LabVIEW references are not even directed to the same subject matter as the '232 invention, which involves debugging control devices, i.e. PLCs. Rather, the cited LabVIEW references describe data acquisition (DAQ) systems that are not control devices as disclosed in '232. The LabVIEW reference fails to disclose the performance of "controlling industrial processes, manufacturing equipment, and other factory automation applications." [see

'232, C1-10] Hooper provided nothing to compare and contrast the technical and operational

aspects of a data acquisition system with that of a control device such as a PLC. Therefore,

Hooper's citations related to data acquisition cannot be readily applied to a control device as

disclosed in '232.

96.   Claims 1-3, 5, 10, and 11 require "storing a program in a control device."

However, the LabVIEW reference cited by Hooper does not disclose a control device as defined

in the '232 invention.

97.   Claims 1-3, 5, 10, and 11 require that "the control device receives a message from

a communications medium." However, the LabVIEW reference cited by Hooper does not

disclose the control device receiving a message from a communications medium. Rather,

Hooper simply states in his declaration, "communications channel" (Hooper Dec., ¶¶ 157, 159).

The cited LabVIEW document describes this "communications channel" as a shared memory

interface which is not a communications medium as disclosed in '232. Further, the LabVIEW

reference does not disclose the "message" required by the claims. Therefore, no LabVIEW

reference was provided that discloses a control device receiving a message from a

communications medium.

98.   Claims 1-3, 5, 10, and 11 require that "the message includes instructions to

suspend execution of the stored program at a particular location of the stored program." The

cited LabVIEW reference does not disclose a message to suspend execution of the stored

program at a particular location in a stored program.

99.   Claims 1-3, 5, 10, and 11 require "executing at least a portion of the stored

program in the control device according to the instructions." Hooper argues that this limitation is

disclosed in the LabVIEW reference on page 2-23 through the "Click on the Run button to run

the VI" that "will execute at least a portion of the program." I disagree. The cited LabVIEW reference does not disclose executing a portion of a stored program according to instructions contained in a message.

100.   Claims 1-3, 5, 10, and 11 require "suspending execution of the stored program according to the instructions." Hooper argues that this limitation is disclosed in the LabVIEW reference on page 2-23 through the "Step Into" or "Step Over" buttons. I disagree. The cited reference does not disclose suspending execution according to instructions in a message.

101.   Claims 1-3, 5, 10, and 11 further require "receiving a mode change message with instructions therein to execute the stored program in a step mode from the location in which the program was suspended." Hooper again argues that this limitation is disclosed in the LabVIEW reference via "Step Into" or "Step Over" buttons. I disagree. The cited LabVIEW reference does not disclose receiving a message. Also, Hooper's report cites "Step Over" and "Step Into" features for the suspension element, where the program somehow suspends at a particular location of the program. However, he also uses these same citations as examples of a mode change instruction. No explanation is provided as to how the same cited action causes both suspension and a step mode change.

102.   Claim 2 requires "repeating executing the at least a portion of the stored program and suspending execution of the stored program, in response to another message from the communications medium." Hooper argues that this limitation is disclosed in the LabVIEW reference on page 2-23 through the "Run" button. I disagree. The cited LabVIEW reference does not disclose use of a message on a communications medium. Also, Hooper provides no citation to support the use of messages for repeating run/suspend of the same program portion; he cites only the existence of breakpoints, and an ability to step through.

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103.   Claim 3 requires "providing data to the communications medium in response to a data request message from a network while execution of the stored program is suspended." Hooper argues that this limitation is disclosed in the LabVIEW reference on page 2-22 of the user's guide, through "Probe" and through "Host PC" in communication with "Real-Time Data Acquisition Hardware" over a "Communication Channel." I disagree. The cited LabVIEW reference does not disclose that the transfer of probe data can occur when execution of the stored program is suspended. Further, the reference does not disclose responding to a message. The cited LabVIEW manual discloses shared memory interfaces between a host computer and an embedded computer. No specific citation was provided to indicate that data can be shared over a network while a program is suspended on the embedded computer. Moreover, Hooper asserts that "one of ordinary skill in the art would have understood that probe data is available and valid both when the program is executing and when the program is suspended." However, there is no disclosure of this at all in the LabVIEW reference and it is my opinion that Hooper's assertion appears to be an application of impermissible hindsight using the '232 invention to suggest features that are not otherwise disclosed in the LabView reference.

104.   Claims 5, 10 and 11 require "wherein the mode change message further comprises a step type, and wherein executing the at least a portion of the stored program and suspending execution of the stored program are done according to the step type." Hooper argues that this limitation is disclosed in the LabVIEW reference via the "Step Into" and "Step Over" buttons. I disagree with Hooper's analysis. The cited LabVIEW reference does not disclose the use of messages related to a step type. Also, LabVIEW doesn't disclose that the suspending execution is done according to the step type.

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105.   Claim 10 requires "repeating executing the at least a portion of the stored program and suspending execution of the stored program, in response to another message from the communications medium." Hooper argues that this limitation is disclosed in the LabVIEW reference via the "Run" button. I disagree. The cited LabVIEW reference does not disclose the use of messages and contains no disclosure of repeating run/suspend of same program portion; the citations refer only to the existence of breakpoints, and an ability to step through.

106.   Claim 11 requires "providing data to the communications medium in response to a data request message from the network while execution of the stored program is suspended." Hooper argues that this limitation is disclosed in the LabVIEW reference via the "Probe" functionality and that "one of ordinary skill in the art would have understood that probe data is available and valid both when the program is executing and when the program is suspended in one of the step modes." I disagree. The cited LabVIEW reference does not disclose the use of messages. Also, it does not disclose that the transfer of probe data can occur when execution of the stored program is suspended. Further, the reference does not disclose responding to a message. Moreover, Hooper provides no basis for his statement regarding a PHOSITA understanding the availability of probe data during execution and suspension. It is my opinion that Hooper's statement appears to be made using unpermitted hindsight.

107.   Claim 14 requires "A method of performing a function in a control device comprising." However, as noted above, the cited LabView documents describe data acquisition (DAQ) systems that are not control devices as disclosed in '232.

108.   Claim 14 requires "providing a control device that selectively executes a program and receives messages from a network." However, the cited documents do not disclose the use of messages from a network.

109.   Claim 14 further requires "receiving a mode change message from the network." However, the cited LabVIEW references do not disclose mode change messages from a network.

110.   Claim 14 further requires "suspending execution of the program according to the mode change message." However, the cited LabVIEW references do not disclose mode change messages. Consequently, the references do not disclose that any mode change message suspends execution of the program.

111.   Claim 14 further requires "receiving a step command message from the network." However, the cited LabVIEW references do not disclose step command messages from a network.

112.   Claim 14 further requires "executing at least a portion of the program in the control device according to the message." However, the cited LabVIEW references do not disclose the use of messages.

113.   Claim 14 further requires "suspending execution of the program according to the message." The cited LabVIEW references do not disclose the use of messages. Consequently, they do not disclose suspending execution according to any command message.

2.   U.S. Patent No. 6,801,813

114.   See descriptions in Opening Expert Report.

115.   The '813 patent discloses a system and method of providing data storage and retrieval on an industrial controller, specifically as embodied in a Programmable Logic Controller (PLC). The patent discloses a PLC "file" as an input-output data image resident within the PLC's program memory. It further discloses a new "file system" in the PLC's program memory that provides a programmable interface with data in program memory, and also with

data in non-volatile storage devices. The patent also discloses "file system services" that provide programmable interaction between the memory-resident data image files and the file system.

116.   Although prior art PLC systems disclosed in the '813 patent had memory-resident data files, they lacked file systems and file system services to store and retrieve data under program control. Data exchange with a PLC was therefore done via a communications link to another system which had the necessary file service capability. The PLC disclosed in '813 contains a file system and file services to allow data storage and retrieval without need for a separate data storage system. The patent also discloses the use of file services to connect the PLC with remote storage systems using common file services.

117.   One aspect of the '813 patent is the use of file system instructions, located within the control program itself, to utilize the file system services. The use of these instructions required an improved control program editor as disclosed in the related '415 patent discussed below.

118.   WAGO, themselves, have identified the long felt need in the industrial control industry for the invention in claimed in the '813 patent. For example WAGO published a White Paper "Removable Storage Media Add Flexibility to Modern Day PLCs" which identified the long felt need of the '813 invention, namely a PLC with an on board file system that could easily interface to off-the-shelf devices. *See ROCK0008605-0008607.* The state of the industry described by WAGO illustrates a long-felt need for the methods and systems claimed in the '813 patent (and the '415 patent). This coincides with my understanding that the '813 Patent addressed a difficult problem that had always existed with PLCs. Conventional PLCs were not user friendly in regard to data exchange, and could not easily store and retrieve large amounts of data relating to automated processes. Therefore, the invention embodied in the '813 patent

provided an onboard file system that solved these problems and represented an important step away from the limited data capabilities of the conventional PLCs that preceded it.

Hooper's Analysis of the claims of the '813 Patent

119.   In his declaration, Hooper steps through 18 different claims of the '813 patent, each of which has a different scope, and opines generally that "[t]he analysis shows all of the claim limitations to be met by either by a single piece of prior art, or by combining pieces of prior art. When combining pieces of prior art, I have applied elements according to their known function and described the predictable results of their combination." (Hooper Dec., ¶ 222). It is unclear from this whether Hooper is asserting that each claim is invalid for anticipation, for obviousness, or for both. Therefore in this report, I address only those assertions and combinations explicitly made in Hooper's declaration that are accompanied by Hooper's analysis. I reserve the right, however, to supplement and amend my opinions should Hooper amend, clarify, or supplement his invalidity contentions.

120.   Hooper's declaration ignores and does not opine on claim construction issues with regards to the '813 patent.

121.   Moreover, in each section of his declaration, Hooper has failed to provide any analysis regarding the alleged anticipation or obviousness, but instead limits himself to generic opening assertions followed by copying information from various alleged prior art references. In light of the ambiguities and general unclarity of Hooper's declaration, I avoid speculating on his positions. I reserve the right to supplement and amend this report in response to any subsequent positions taken by Hooper.

122.   As I detail below, it is my opinion that all of the asserted claims are valid over the references asserted by Hooper, individually, together, or in combination.

123.   It is my opinion that none of the references cited by Hooper completely disclose the method and system disclosed in the '813 patent. Further, Hooper never explains why a PHOSITA would have any reason, teaching, suggestion or motivation to combine the cited references. Hooper also fails to explain how or why a PHOSITA would have selected and combined those prior art elements in the normal course of research and development to yield the claimed invention.

Hooper's Analysis of Claims 1, 3, 4 and 21-22 of the '813 Patent

124.   Hooper's invalidity analysis of Claims 1, 3, 4 and 21-22 of the '813 patent appears to be limited to arguments of anticipation by U.S. Patent No. 6,519,594 ("Li") and 6,263,487 ("Stripf"). (Hooper Dec., ¶¶ 223 and 224). Hooper has not provided any obviousness arguments with regards to these references.

125.   Further, Hooper never explains why a PHOSITA would have any reason, teaching, suggestion or motivation to combine the cited references. Hooper also fails to explain how or why a PHOSITA would have selected and combined those prior art elements in the normal course of research and development to yield the claimed invention.

126.   In my opinion, the Li reference, as cited by Hooper, fails to disclose each and every element of any of the asserted claims of the '813 Patent and/or does not sufficiently describe the claimed invention to have placed the public in possession of it. A PHOSITA at the time of the invention could not have combined the Li reference with his own knowledge to make the claimed invention.

127.   Likewise, in my opinion, the Stripf reference, as cited by Hooper, fails to disclose each and every element of any of the asserted claims of the '813 Patent and/or does not sufficiently describe the claimed invention to have placed the public in possession of it. A

PHOSITA at the time of the invention could not have combined the Stripf reference with his own knowledge to make the claimed invention.

Hooper's Analysis of Claim 2 of the '813 Patent

128.   Hooper's invalidity analysis of Claim 2 of the '813 patent is limited to arguments of anticipation by Li and Stripf. (Hooper Dec., ¶¶ 234 and 235). In passing, Hooper also states that "user defined routines or programs were well known at the time" (Hooper Dec., ¶ 239) and "[h]eader instructions were also well-known at the time" (Hooper Dec., ¶ 240). He also cites a number or U.S. Patents. However, Hooper provides no substantive analysis of these references and does not argue that they anticipate or render Claim 2 obvious. Thus, it is unclear from this whether Hooper is asserting that Claim 2 is invalid for anticipation, obviousness, or both in light of these references. It is also not clear which combinations of references Hooper is relying on (if he is even attempting to make an obviousness argument). Accordingly, I address only those assertions and combinations made in Hooper's declaration.

129.   Hooper offers no support for his statement that his "analysis shows all of the claim limitations to be met . . . by combining pieces of prior art" or his statement that he has "applied elements according to their known function and described the predictable result of their combination." (Hooper Dec., ¶ 222). It is impossible to determine from his declaration and exhibits 1) if any combination of references share a common objective, 2) the known functions of those references, or 3) any predictable result of their combination. It is my opinion that, taken alone and/or in combination, Hooper's collection of references does not disclose or render obvious the elements of Claim 2. Further, Hooper has provided no evidence of any reason, teaching, suggestion or motivation to modify or combine the cited references. Hooper also fails

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to explain how or why a PHOSITA would have selected and combined those prior art elements in the normal course of research and development to yield the claimed invention.

130.   Hooper has also failed to opine on whether one skilled in the art would be able to make such combinations successfully without undue experimentation or risk of failure. Some of the asserted references teach complex computer systems, and a PHOSITA would know that changing or adding an element to any of the systems may require other substantial modifications as a consequence of the change or addition.

Hooper's Analysis of Claims 5-7, 10-17 and 20 of the '813 Patent

131.   Hooper's invalidity analysis of Claims 5-7, 10-17 and 20 of the '813 patent consists of the following generalized statements (followed by the citation to a number of U.S. patents): "use of recipe files in industrial control work was well known" (Hooper Dec., ¶ 253), "storage of the recipe files in a memory device separate from the program memory was well-known" (Hooper Dec., ¶ 260), "logging measured data in industrial control work was well-known" (Hooper Dec., ¶ 271), "retrieving measured data in industrial control work was well known" (Hooper Dec., ¶ 277), "storage of a measured data file at a memory device separate from program memory was well known" (Hooper Dec., ¶ 283), "logging trend data in industrial control systems was well-known at the time of the invention" (Hooper Dec., ¶ 292), "[o]ne of ordinary skill in the art at the time would have understood that this data would have included trend data" (Hooper Dec., ¶ 293, 297, 301, 305), "[l]adder logic programs we [sic] well-known at the time" (Hooper Dec., ¶ 309), and "[o]ne of ordinary skill in the art could have combined Li with ladder logic according to its known function with predictable results" (Hooper Dec., ¶ 310). Hooper provides no substantive analysis in support of these references or statements. His report

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is not clear about which combinations of references Hooper is relying on, or if he is even attempting to make an obviousness argument.

132.   It is impossible to determine from Hooper's declaration and exhibits 1) if any combination of references share a common objective, 2) the known functions of those references, or 3) any predictable result of their combination. It is my opinion that there is no motivation to combine the cited references, and that alone and/or in combination the collection of prior art references do not disclose or render obvious the elements of the asserted claims.

133.   Hooper has also failed to opine on whether one skilled in the art would be able to make such combinations successfully without undue experimentation or risk of failure. Some of the asserted references teach complex computer systems, and a PHOSITA would know that changing or adding an element to any of the systems may require other substantial modifications as a consequence of the change or addition.

Hooper's analysis of Li

134.   Hooper makes a general allegation that Li "discloses every element of Claim[s] [1-4 and 21-22] of the '813 Patent." (Hooper Dec., ¶¶ 223, 234, 241, 245, 312 and 320). I disagree.

135.   It is my opinion that Li does not anticipate or render obvious any of the asserted claims of the '813 patent.

136.   Li does not contain disclosure sufficient to enable a PHOSITA to practice the inventions claimed in the '813 patent without undue experimentation. The citations to the Li reference contain no substantive representation of the claimed invention in such, full, clear, and exact terms as to enable a PHOSITA to make, construct, and practice the invention. The

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citations, if anything, are vague and ambiguous as to the presence or description of the claim elements and thus do not suffice for anticipation.

137.   Claims 1-7, 10-13, 15-17, 20 require "a file system residing in a program memory of an industrial controller, the file system having a plurality of file system services." Li merely discusses a JavaLayer file system as it relates to management of memory-resident software objects or modules for access by virtual machine code. The purpose of Li's system is to facilitate sharing of Java classes (i.e., blocks of compiled Java source code) by different Java Virtual Machines (see, e.g., Li, Abstract). In contrast, implementations of the claims of the '813 patent are suitable for full service file management, including the ability to log and retrieve measured data, control parameters and/or recipes, and/or the like, all in the form and context of files and file systems accessed by an industrial control program Li's system does not disclose such flexibility. Furthermore, Li provides no disclosure that it applies to instructions in a control program or that the file services reside on the type of industrial controller disclosed in the '813 patent. Li mentions "an industrial controller" once in cursory passing as one of eight examples of generic hardware types that can host embedded computer systems. Li provides no significant discussion of the implementation, let alone a substantial representation in such full, clear and exact terms as to enable a PHOSITA to make, construct, and practice the invention as claimed. The citation is vague and ambiguous as to the presence or description of this claim element and thus does not suffice for anticipation. Moreover, I disagree that with Hooper's statement that "the class mapper 175" discloses "the "file system having a plurality of file system services" as disclosed in the '813 patent.

138.   Claims 1-7, 10-13, 15-17, 20 require "an execution engine residing in the program memory of the industrial controller, the execution engine adapted to interpret code from an

industrial control program, the industrial control program including at least one instruction utilizing one or more of the plurality of file system services." As discussed above, Li does not provide substantive disclosure regarding implementing a file system in an industrial control system. The cited portions of Li (Java Virtual Machines "JVM") do not disclose an "engine adapted to interpret code from an industrial control program" in general, or an industrial control program that includes JAVA byte code instructions in particular. Thus, of course, Li's JVM system fails to disclose an "industrial control program including at least one instruction utilizing one or more of the plurality of file system services." Therefore, Li does not meet each and every element of these claims, nor does it render them obvious.

139.   Claims 2-3 require "the file system and the execution engine being adapted to load user defined routine files upon loading an industrial control program having one or more header instructions for including a user defined routine file, the included user defined routine file being loaded into the same program space as the industrial control program." However, the citations Hooper makes to Li discuss Java Classes which are software modules containing both data descriptions and methods (code) for the execution engine that is unrelated to an industrial control program. Further, Li does not disclose file services used by an execution engine in relation to a header instruction.

140.   Hooper further states that "user defined routines were well known at the time" and cites a number of references. Hooper never explains why a PHOSITA would have any reason, teaching, suggestion or motivation to combine the cited references. Hooper also fails to explain how or why a PHOSITA would have selected and combined those prior art elements in the normal course of research and development to yield the claimed invention. Moreover, the cited references are unrelated to the '813 invention and do not disclose the claim elements

therein: the Bourne reference is abstract software; the Flood '189 reference is related to scheduling the processing of program code located in separate segments of system memory (with no mention of file services); the Stuger reference is for user routines stored on ROM or in program memory (with no mention of file services); and the Shearer reference has nothing related to files or routines.

141.   Similarly, Hooper's statement that "header instructions were also well-known at the time" appears to be making a vague obviousness argument, but fails to explain why a PHOSITA would have any reason, teaching, suggestion or motivation to combine the cited references, or why the aspects alleged to be obvious would have presented themselves to a PHOSITA in the context of the claim as a whole. Hooper also fails to explain how or why a PHOSITA would have selected and combined those prior art elements in the normal course of research and development to yield the claimed invention. In any event, Hooper's statement is not relevant to the claimed execution engine and control program headers that relate to loading user routines when a control program is loaded.

142.   Claims 21 and 22 require "A method for providing, an industrial controller with the functionality associated with utilizing a file system residing in the industrial controller, the method comprising." However, Li discusses a JavaLayer file system as it relates to a device's real time operating system for management of memory-resident software modules. Li provides no disclosure that its file system aspects apply to instructions within a control program, or that the file services reside on the type of industrial controller disclosed in the '813 patent.

143.   Claims 21 and 22 require "developing an execution engine that interprets instructions of an industrial control program that utilizes at least one of the plurality of file

system services." However, Li does not disclose an execution engine on an industrial controller that interprets instructions of an industrial control program to utilize file services.

144.   Claim 22 requires "developing an industrial control program including at least one instruction that utilizes one or more file system services and downloading the industrial control program to the industrial controller." However, Li does not disclose anything related to the use of file system services in an industrial control program.

145.   Hooper makes a general allegation that Li "combined with the recipe files detailed in numerous publications discloses every element of Claim[s] [5-7] of the '813 patent." (Hooper Dec., ¶¶ 250, 255, 261). I disagree.

146.   Hooper's invalidity analysis of these claims never explains or provides any evidence why a PHOSITA would have any reason, teaching, suggestion or motivation to combine the cited references. Hooper also fails to explain how or why a PHOSITA would have selected and combined those prior art elements in the normal course of research and development to yield the claimed invention.

147.   Claims 5-7 require "the file system and the execution engine being adapted to load one or more recipe files into an executing industrial control program upon executing a load instruction in an industrial control program." Hooper does not opine that Li discloses this element. Rather Hooper states that Li combined with the "recipe files detailed in numerous publications discloses every element of Claim 5." I disagree. The cited references are unrelated to the '813 invention and do not disclose the claim elements therein: Belo discloses networked recipe transmission from a workstation to machines in a manufacturing cell with no relation to file services; Jang makes no mention of file systems on an industrial controller (it refers only to computer servers that gather information); Bhagwat has no mention of files; Siegrist '483 makes

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no mention of files; Siegrist '946 has recipe data on a PC transmitted to a controller without the use of files; Bender has a separate computer and PLC, with storage only on the separate computer; Cotugno is software production on a computer, not directly related to recipes in a PLC. Moreover, I disagree with Hooper's statement that "one of ordinary skill in the art would understand that the files disclosed in Li would include recipe files." Hooper has provided no discernible basis for this statement. Accordingly, it is my opinion that these references independently or in combination with Li do not render Claim 5 obvious.

148.   Hooper makes a general allegation that Li "in combination with numerous other publications discloses every element of Claim[s] [10-13, 14-17, 20] of the '813 patent." (Hooper Dec., ¶¶ 266, 272, 278, 284, 289, 294, 298, 302 and 306).

149.   With regards to Claims 10-13 the cited portions of Li contain no discussion of an execution engine or file service instructions relating to industrial control programs. Moreover, Li contains no discussion of logging or retrieving of measured data, or storing measured data on a device separate from the program memory (whether that being on the controller or at a remote location). Moreover, the additional cited references are unrelated to the '813 claims and do not disclose the claim elements therein.

150.   For claims 10 and 11, I disagree with Hooper's statement that the "data storage device 104" discloses that the file system and execution engine are "being adapted to log [or retrieve] measured data into a file upon executing an instruction in an industrial control program to record the measured data."

151.   Claims 14-17 require "the file system and the execution engine being adapted to log trend data into a file upon executing an instruction in an industrial control program to record

the trend data." I disagree with Hooper's statements that "one of ordinary skill in the art at the time would have understood that [logging data in Li] would have included trend data."

152.   Claim 15 requires "the file system and the execution engine being adapted to retrieve trend data from a file upon executing an instruction in an industrial control program to load the trend data." As Hooper admits, there is no portion of Li that discloses trend data. Further, Hooper provides no support or analysis for his statement that "one of ordinary skill in the art at the time would have understood that [retrieved data in Li] would have included trend data." Therefore, I disagree that Li anticipates or renders this claim obvious.

153.   Claims 16-17 requires "the trend data file being stored at a memory device separate from the program memory." Hooper admits that no portion of Li that discloses storing data on memory devices separate from the program memory. Hooper provides no support for his statement that "one of ordinary skill in the art at the time would have understood that this data could have included trend data." Accordingly, I disagree that Li anticipates or renders this claim obvious.

154.   Claim 17 requires "the memory device being located at one of the industrial controller and a remote location from the industrial controller." Hooper once again admits that no portion of Li discloses storing data on memory devices separate from the program memory. In addition, Hooper fails to provide any support for his conclusion that "one of ordinary skill in the art at the time would have understood that the data stored and retrieved could have included trend data." Accordingly, I disagree that Li anticipates or renders this claim obvious.

155.   Claim 20 requires "the industrial control program being a ladder logic program." Hooper cites to no portion of Li that discloses ladder logic. Instead, Hooper states that "one of ordinary skill in the art could have combined Li with ladder logic according to its known

function with predictable results." I disagree. Li has no discussion of industrial control or ladder

logic whatsoever, and Hooper fails to support his conclusion with any evidence or analysis.

Accordingly, I disagree that Li anticipates or renders this claim obvious.

Hooper's analysis of Stripf

156.   Hooper makes a general allegation that Stripf "discloses every element of

Claim[s] [1-4 and 20-22] of the '813 Patent." (Hooper Dec., ¶¶ 224, 235, 242, 246, 307, 313 and

321). I disagree.

157.   It is my opinion that Stripf does not anticipate or render obvious any of the

asserted claims of the '813 patent.

158.   Stripf does not contain disclosure sufficient to enable a PHOSITA to practice the

inventions claimed in the '813 patent without undue experimentation. The citations to the Stripf

reference contain no substantive representation of the claimed invention, in such full, clear, and

exact terms as to enable a PHOSITA to make, construct, and practice the invention. The

citations, if anything, are vague and ambiguous as to the presence or description of the claim

elements and thus do not suffice for anticipation.

159.   Claims 1-7, 10-13, 15-17, 20 require "a file system residing in a program memory

of an industrial controller, the file system having a plurality of file system services." Stripf

addresses exchanging software function blocks among PLCs on a network. However, the Stripf

patent contains no mention of files, file systems, or plurality of file system services, let alone of a

file system residing in program memory of an industrial controller. Hooper's examples of file

system services cannot be substantiated on the basis of the provided citations.

160.   Claims 1-7, 10-13, 15-17, 20 require "an execution engine residing in the program

memory of the industrial controller, the execution engine adapted to interpret code from an

industrial control program, the industrial control program including at least one instruction utilizing one or more of the plurality of file system services." However, nothing in Stripf discloses an execution engine adapted to interpret code related to file system services. The cited reference provides no substantive representation of the claimed invention, and certainly not in such a full, clear, and exact way as to enable a PHOSITA to make, construct, and practice the invention.

161.   Claims 2-3 require "the file system and the execution engine being adapted to load user defined routine files upon loading an industrial control program having one or more header instructions for including a user defined routine file, the included user defined routine file being loaded into the same program space as the industrial control program." However, the cited portion of Stripf merely discusses loading Java routines without any context relevant to files or file services. The citation does not address loading of user defined routines upon loading of an industrial control program. The citation provides no specific reference to header instructions.

162.   Claim 3 requires "the user defined routine files being stored at a memory device separate from the program memory." However, sending function blocks over the internet as disclosed in Stripf does not inherently include the use of file services on an industrial controller. Therefore this element is not disclosed in Stripf.

163.   Claims 21 and 22 require "developing a file system and loading the file system on an industrial controller, the file system having a plurality of file system services." However, Stripf makes no disclosure of a file system or file system services on an industrial controller. Rather, Stripf merely discusses an internet connection for receiving software function blocks, and related software for managing function blocks in the program memory of a controller.

164.   Claims 21 and 22 require "developing an execution engine that interprets instructions of an industrial control program that utilizes at least one of the plurality of file system services." However, Stripf does not disclose an execution engine on an industrial controller that interprets instructions of an industrial control program to utilize file services.

165.   Claim 22 requires "developing an industrial control program including at least one instruction that utilizes one or more file system services and downloading the industrial control program to the industrial controller." However, Stripf does not disclose an industrial control program having at least one instruction utilizing file services.

166.   In my opinion, the Stripf reference, as cited by Hooper, fails to disclose each and every element of any of the asserted claims of the '813 Patent and/or does not sufficiently describe the claimed invention to have placed the public in possession of it. A PHOSITA at the time of the invention could not have combined the Stripf reference with his own knowledge to make the claimed invention.

167.   Hooper makes a general allegation that Stripf "combined with the recipe files detailed in numerous publications discloses every element of Claim[s] [5-7] of the '813 patent." (Hooper Dec., ¶¶ 251, 256 and 262). I disagree.

168.   Throughout his analysis of these claims, Hooper never explains and fails to provide any evidence of why a PHOSITA would have any reason, teaching, suggestion or motivation to combine the cited references. Hooper also fails to explain how or why a PHOSITA would have selected and combined those prior art elements in the normal course of research and development to yield the claimed invention. Rather, Hooper's citations are vague and do not guide an artisan of ordinary skill towards the claimed inventions of the '813 patent.

169.   Claims 5-7 require "the file system and the execution engine being adapted to load one or more recipe files into an executing industrial control program upon executing a load instruction in an industrial control program." Hooper does not opine that Stripf discloses this element. Rather, Hooper states that Stripf combined with the "recipe files detailed in numerous publications discloses every element of Claim 5." I disagree. Hooper has not provided clear and convincing evidence that a PHOSITA at the time of the invention would have selected and combined such prior art elements in the normal course of research and development to yield the claimed invention. Thus, it is my opinion that these references independently or in combination with Stripf do not render Claim 5 obvious.

170.   Hooper makes a general allegation that Stripf "in combination with numerous other publications discloses every element of Claim[s] [10-13, and 15-17] of the '813 patent." (Hooper Dec., ¶¶ 267, 273, 279, 285, 295, 299 and 303). I disagree.

171.   With regard to these claims, Hooper again never explains and fails to provide any evidence of why a PHOSITA would have any reason, teaching, suggestion or motivation to combine the cited references. Hooper also fails to explain how or why a PHOSITA would have selected and combined those prior art elements in the normal course of research and development to yield the claimed invention. Rather, Hooper's citations are vague and do not guide an artisan of ordinary skill towards the claimed inventions of the '813 patent.

172.   With regards to Claims 10-13 the cited portions of Stripf contain no discussion of the elements in these claims and contains no discussion of logging or retrieving of measured data, or storing that measured data on a device separate from the program memory (whether that being on the controller or at a remote location). The Stripf reference is unrelated to storing measured data using file services on a PLC.

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173.   Claims 14-17 require "the file system and the execution engine being adapted to log trend data into a file upon executing an instruction in an industrial control program to record the trend data." Hooper cites to no portion of Stripf that discloses trend data. Instead Hooper states that "one of ordinary skill in the art at the time would have understood that [logging data in Stripf] would have included trend data. I disagree. Hooper provides no basis for his statement regarding a PHOSITA. Moreover, Stripf makes no discussion of trend data whatsoever.

174.   Claim 15 requires "the file system and the execution engine being adapted to retrieve trend data from a file upon executing an instruction in an industrial control program to load the trend data." Hooper cites to no portion of Stripf that discloses trend data. Instead Hooper states that "one of ordinary skill in the art at the time would have understood that [retrieved data in Stripf] would have included trend data." I disagree. Hooper provides no basis for his statement regarding a PHOSITA. Moreover, Stripf contains no discussion of trend data whatsoever. Hooper fails to provide any evidence of some reason or motivation that would have prompted a PHOSITA at the time of the invention to have combined the cited references.

175.   Claims 16-17 requires "the trend data file being stored at a memory device separate from the program memory." Hooper cites to no portion of Stripf that discloses this element. Moreover, I disagree with Hooper's conclusion that "one of ordinary skill in the art at the time would have understood that this data could have included trend data" in the context of the invention as a whole. Stripf has no discussion of trend data whatsoever.

176.   Claim 17 requires "the memory device being located at one of the industrial controller and a remote location from the industrial controller." Hooper cites to no portion of Stripf that discloses this element. Hooper's conclusion that "one of ordinary skill in the art at the

time would have understood that the data stored and retrieved could have included trend data" in

the context of the invention as a whole, is not supported by any analysis.

177.   Hooper has also failed to opine on whether one skilled in the art would be able to

make such combinations successfully without undue experimentation or risk of failure. Some of

the asserted references teach complex computer systems, and a PHOSITA would know that

changing or adding an element to any of the systems may require other substantial modifications

as a consequence of the change or addition.

3.   U.S. Patent No. 7,065,415

178.   See descriptions in Opening Expert Report.

179.   "Ladder logic" is a programming language for PLC systems. The '415 patent

discloses a program editor for a ladder logic program containing file system instructions to log

and retrieve PLC data. This editor enables the use of file system instructions within a control

program as disclosed in the related '813 patent discussed above.

180.   The file system instructions relevant to the '415 patent relate to data transfer

activity that occurs within a control program. However, the analysis of '415 performed by

Hooper appears to interpret the claimed file system instructions as related to storage and retrieval

of the ladder logic program itself. A correct interpretation of this limitation, based on the patent

specification and history, clearly discloses file system instructions used within a control program.

Specifically, the specification states that"[t]he editor is adapted to allow a user to insert and edit

instructions for logging and retrieval of measurement data and trend data in the ladder logic

instructions." *See* Column 6, lines 45-48. Accordingly, in Claim 1 of the '415 patent the "first

instruction" that allows a file system that resides on an industrial controller to log data to a file

using ladder logicinstructions. . Similarily, the "second instruction" allows the file system to retrieve data from a file using ladder logic instructions. .

181.   As noted in the above analysis for the '813 patent, the use of file service instructions <u>within the ladder logic program</u> was not found in prior art. Similarly, the editor required to implement the related file system instructions was not found in the prior art.

182.   I recognize that in conjunction with the long felt need for a PLC with an on board file system there was a similar long felt need for software editor to program the use of the file system on those PLCs. This need was satisfied by the invention disclosed in Rockwell's '415 patent. Preexisting software would not allow a user to program the use the file system services of the PLC. The invention embodied in the '415 patent provided a solution to that problem.

Hooper's Analysis of the Claims of the '415 Patent

183.   In his declaration, Hooper steps through 7 different claims of the '415 patent, each of which has a different scope, and opines generally that "[t]he analysis shows all of the claim limitations to be met by either by a single piece of prior art, or by combining pieces of prior art. When combining pieces of prior art, I have applied elements according to their known function and described the predictable results of their combination." (Hooper Dec., ¶ 430). It is unclear from this whether Hooper is asserting that each claim is invalid for anticipation, for obviousness, or for both. Therefore in this report, I address only those assertions and combinations explicitly made in Hooper's declaration that are accompanied by Hooper's analysis. I reserve the right, however, to supplement and amend my opinions should Hooper amend, clarify, or supplement his invalidity contentions.

184.   Hooper's declaration ignores and does not opine on claim construction issues for the '415 patent.

185.   In each section of Hooper's declaration, he has failed to provide any analysis regarding the alleged anticipation or obviousness, but instead limits himself to generic opening assertions followed by copying information from various alleged prior art references. In light of the ambiguities and general unclarity of Hooper's declaration, I avoid speculating on his positions. I reserve the right to supplement and amend this report in response to any subsequent positions taken by Hooper.

186.   As I detail below, it is my opinion that all of the asserted claims are valid over the references asserted by Hooper, individually, together, and in combination with the references specifically cited by Hooper.

Hooper's Analysis of Claims 1 and 8 of the '415 Patent

187.   Hooper's invalidity analyses of Claims 1 and 8 of the '813 patent appear to be limited to arguments of anticipation by U.S. Patent No. 5,764,507 ("Chuo") and a 1999 TRiLOGI User Manual ("TRiLOGI"). (Hooper Dec., ¶¶ 431-444).

188.   I understand that infringement of Claim 13 of the '415 is no longer at issue. Accordingly I have not provided an infringement analysis of Claim 13 in my Opening Expert Report and likewise have no opinion on Hooper's claims of invalidity of Claim 13.

Hooper's Analysis of Claims 2-5 of the '415 Patent

189.   Hooper's invalidity analysis of Claims 2-5 of the '415 patent is limited to his

respective statements in paragraph 446, 448, 450 and 452 of his declaration. Hooper provides no

substantive analysis of the references cited in these paragraphs and does not argue that they

anticipate or otherwise render obvious Claims 2-5. Thus, it is unclear from this whether Hooper

is asserting that Claims 2-5 are invalid for anticipation, obviousness, for both in light of these

references. It is also not clear which combinations of references Hooper is relying on.

190.   It is impossible to determine from Hooper's declaration and exhibits if, indeed,

any combination of references share a common objective, the known functions of those

references, or any predictable result of their combination. It is my opinion that there is no

motivation to combine the cited references and that alone and/or in combination the collection of

prior art references do not disclose or render obvious the elements of Claims 2-5.

191.   With regards to these claims, Hooper also never explains and fails to provide any

evidence of why a PHOSITA would have any reason, teaching, suggestion or motivation to

combine the cited references. Hooper also fails to explain how or why a PHOSITA would have

selected and combined those prior art elements in the normal course of research and development

to yield the claimed invention. Rather, Hooper's citations are vague and do not guide an artisan

of ordinary skill towards the claimed inventions of the '415 patent.

192.   Hooper fails to lay out any facts to support elements of obviousness. He cites no

disclosure of any measured data being logged to or retrieved, trend data being logged or

retrieved, any recipe being retrieved, or user-defined routine being retrieved.

Hooper's analysis of Chuo

193.   Hooper makes a general allegation that Chuo "discloses every element of Claim 1 of the '415 Patent." (Hooper Dec., ¶¶ 431). I disagree

194.   It is my opinion that Chuo does not anticipate or render obvious any of the asserted claims of the '813 patent.

195.   Claims 1-5 and 8 require "a first instruction that employs a file system that resides on an industrial controller to log data to a file containing ladder logic instructions." However, the cited Chuo reference does not disclose this. As discussed above, the cited portion of Chuo discusses saving the program file itself, as opposed to a ladder logic program using instructions to log PLC data to a storage file.

196.   Claims 1-5 and 8 require "a second instruction that employs the file system to retrieve the data from the file containing ladder logic instructions." However, the cited Chuo reference does not disclose accessing a "file system that resides on an industrial controller" to access the data in the file. Moreover, Chuo is referencing the program file itself as opposed to PLC data being operated on by a functioning ladder logic program.

197.   Claim 8 requires "a plurality of additional instructions that facilitate utilizing file system services of the file system." Hooper states that "Chuo when combined with the TriLOGI commercial product discloses every element of Claim 8 of the '415 patent." I disagree. Hooper provides no citation to Chuo whatsoever, and Chuo does not disclose this element. Hooper also never explains and fails to provide any evidence of why a PHOSITA would have any reason, teaching, suggestion or motivation to modify or combine the cited references. Hooper also fails to explain how or why a PHOSITA would have selected and combined those prior art elements in the normal course of research and development to yield the claimed invention.

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198.   In my opinion, the Chuo reference relied upon by Hooper does not contain any disclosure sufficient to enable a PHOSITA to practice the inventions claimed in the '415 patent without undue experimentation. The citations to the Chuo reference contain no substantive representation of the claimed invention, in such full, clear, and exact terms as to enable a PHOSITA to make, construct, and practice the invention. The citations, if anything, are vague and ambiguous as to the presence or description of the claim elements and thus do not suffice for anticipation.

199.   In my opinion, the Chuo reference, as cited by Hooper, fails to disclose each and every element of any of the asserted claims of the '415 patent and/or does not sufficiently describe the claimed invention to have placed the public in possession of it. A PHOSITA at the time of the invention could not have combined the Chuo reference with his own knowledge to make the claimed invention.

Hooper's analysis of the TRiLOGI

200.   Hooper makes a general allegation that TRiLOGI "discloses every element of Claim[s] [1 and 8] of the '415 Patent." (Hooper Dec., ¶¶ 432 and 454). I disagree.

201.   My analysis confirms that the TRiLOGI reference does not disclose the elements as recited in the asserted claims of the '415 patent.

202.   Claims 1-5 and 8 require "a first instruction that employs a file system that resides on an industrial controller to log data to a file containing ladder logic instructions." However, the cited TriLOGI reference for "Save" refers to a file system that resides on a program development computer, not on the target PLC. Therefore, the cited reference is not relevant to a file system that resides on an industrial controller. There is also no discussion of logging data to any file, let alone to file system instructions in a file containing ladder logic instructions.

203.   Claims 1-5 and 8 require "a second instruction that employs the file system to retrieve the data from the file containing ladder logic instructions." However, the cited reference for "Load" refers to a file system that resides on a program development computer, not on the target PLC. Therefore, the cited reference is not relevant to a file system that resides on an industrial controller. There is also no discussion of retrieving any data from a file, let alone to file system instructions in a file containing ladder logic instructions.

204.   Claim 8 requires "a plurality of additional instructions that facilitate utilizing file system services of the file system." However, the cited reference for "logging/saving", "retrieve/open", and "converting/compiling" as well as "change dir" "write to" and "new" refers to a file system that resides on a program development computer, not on the target PLC. Therefore, the cited reference is not relevant to a file system that resides on an industrial controller.

205.   In my opinion, the TRiLOGI reference relied upon by Hooper does not contain any disclosure sufficient to enable a PHOSITA to practice the inventions claimed in the '415 patent without undue experimentation. The citations to the TRiLOGI reference contain no substantive representation of the claimed invention, in such full, clear, and exact terms as to enable a PHOSITA to make, construct, and practice the invention. The citations, if anything, are vague and ambiguous as to the presence or description of the claim elements and thus do not suffice for anticipation.

206.   In my opinion, the TRiLOGI reference, as cited by Hooper, fails to disclose each and every element of any of the asserted claims of the '415 Patent and/or does not sufficiently describe the claimed invention to have placed the public in possession of it. A PHOSITA at the

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time of the invention could not have combined the TRiLOGI reference with his own knowledge to make the claimed invention.

207.   Moreover, a PHOSITA, upon examining TRiLOGI, would be discouraged as to the path of the invention disclosed in the '415 patent because TRiLOGI teaches away from the invention by disclosing a file system separate from the industrial controller.

4.   U.S. Patent No. 7,123,974

208.   See descriptions in Opening Expert Report.

209.   The '974 patent discloses an electronic audit system for an industrial control environment. The technology involves recording and tracking interactions with a control component.

210.   As stated in the patent, the prior art known to a PHOSITA at the time of the invention allowed for limited recordation of program changes, but not in real time. For example, changes such as real time forcing operations and clearing/setting a counter, register, and/or status area of PLC memory were not being recorded and tracked.

211.   I recognize that there was a long felt need for recording and tracking transactions or changes that would occur in PLC-driven systems. This need was satisfied by the invention disclosed in Rockwell's '974 patent, which provided a solution and ultimately a product embodying that solution. The invention provided the ability for recorded interactions to be stored in a substantially real time manner. The invention tracks all interactions with a control system as opposed to merely saving a final program or resultant image of such interactions. The invention facilitated a more controlled and secure auditing environment, which was not present in the art at the time of the invention.

Hooper's Analysis of the Claims of the '974 Patent

212.   In his declaration, Hooper steps through 16 different claims of the '974 patent,

each of which has a different scope, and opines generally that "[t]he analysis shows all of the

claim limitations to be met by either by a single piece of prior art, or by combining pieces of

prior art. When combining pieces of prior art, I have applied elements according to their known

function and described the predictable results of their combination." (Hooper Dec., ¶ 474). It is

unclear from this whether Hooper is asserting that each claim is invalid for anticipation, for

obviousness, or for both. Therefore in this report, I address only those assertions and

combinations explicitly made in Hooper's declaration that are accompanied by Hooper's

analysis. I reserve the right, however, to supplement and amend my opinions should Hooper

amend, clarify, or supplement his invalidity contentions.

213.   Hooper's declaration ignores and does not opine on claim construction issues for

the '974 patent.

214.   Moreover, in each section of his declaration, Hooper has failed to provide any

analysis regarding the alleged anticipation or obviousness, but instead limits himself to generic

opening assertions followed by copying information from various alleged prior art references. In

light of the ambiguities and general unclarity of Hooper's declaration, I avoid speculating on his

positions. I reserve the right to supplement and amend this report in response to any subsequent

positions taken by Hooper.

215.   As I detail below, it is my opinion that all of the asserted claims are valid over the

references asserted by Hooper, individually, together, or in combination.

Hooper's Analysis of Claims 1-3, 5-6, 9-10, 14, 16, 24, and 29 of the '974 Patent

216.   Hooper's invalidity analyses of Claims *1-3, 5-6, 9-10, 14, 16, 24, and 29* of the

'974 patent appears to be limited to arguments of anticipation by U.S. Patent No. 5,469,352

("Yukutomo") and a User Manual for Cimplicity ("Cimplicity") which purports to be from 1997. (Hooper Dec., ¶¶ 475-535 and 541-589).

217.   Hooper has not provided any obviousness arguments with regards to Yukutomo and Cimplicity with regards to these claims, and he provides no explanation why a PHOSITA would have motivation to combine these references.

218.   I understand that Claims 15, 19, 28 and 30 are not at issue in this lawsuit and therefore I have not provided an infringement analysis in my Opening Report on these claims. Likewise, I do not provide any opinion on Hooper's invalidity analysis of Claims 15, 19 and 28.

219.   Accordingly, it is my opinion that the cited references (Yukutomo and Cimplicity) do not disclose the method and system disclosed in the '974 patent.

Hooper's Analysis of Claim 20 of the '974 Patent

220.   Hooper's invalidity analysis of Claim 20 of the '974 patent is limited to his respective statements in paragraphs 536-540 of his declaration.

221.   With regards to Claim 20, Hooper provides no substantive analysis and offers no basis for his statements in paragraphs 536, 537, 539 and 540.

222.   It is impossible to determine from Hooper's declaration and exhibits if, indeed, any combination of references share a common objective, the known functions of those references, or any predictable result of their combination. It is my opinion that there is no motivation to combine the cited references and that alone and/or in combination the collection of prior art references do not disclose or render obvious the elements of Claim 20.

223.   Hooper also never explains and fails to provide any evidence of why a PHOSITA would have any reason, teaching, suggestion or motivation to modify or combine the cited references. Hooper also fails to explain how or why a PHOSITA would have selected and

combined those prior art elements in the normal course of research and development to yield the claimed invention. Rather, Hooper's citations are vague and do not guide an artisan of ordinary skill towards the claimed inventions of the '974 patent.

Hooper's Analysis of the Yukutomo Reference

224.   Hooper makes a general allegation that Yukutomo "discloses every element of Claim[s] [1-3, 5, 6, 9, 10, 14-16, 24 and 29] of the '974 patent." (Hooper Dec., ¶¶ 475, 486, 491, 496, 501, 506, 511, 516, 521, 526, 541 and 576). I disagree.

225.   It is my opinion that Yukutomo does not anticipate or render obvious any of the asserted claims of the '974 patent.

226.   In my opinion, the Yukutomo reference, as cited by Hooper, fails to disclose each and every element of any of the asserted claims of the '974 Patent and/or does not sufficiently describe the claimed invention to have placed the public in possession of it. A PHOSITA at the time of the invention could not have combined the Yukutomo reference with his own knowledge to make the claimed invention.

227.   In my opinion, the Yukutomo reference relied upon by Hooper does not contain any disclosure sufficient to enable a PHOSITA to practice the inventions claimed in the '974 patent without undue experimentation. The citations to the Yukutomo reference contain no substantive representation of the claimed invention, in such full, clear, and exact terms as to enable a PHOSITA to make, construct, and practice the invention.

228.   The citations by Hooper are vague and ambiguous as to the presence or description of the claim elements and thus do not suffice for anticipation.

229.   Claims 1-3, 5, 6, 9, 10, 14 and 16 require "a recording component to log real time interactions with one or more industrial control components." However, the "history buffer"

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cited by Hooper, does not disclose "interactions with one or more industrial control components." The invention of the '974 relates to a system and methodology facilitating automated audit recording and tracking of <u>PLC-based interactions</u>. *See Col.4 lines 18-21.* Moreover the specification defines "industrial control components" to include PLCs, communications modules and/or I/O modules. *See Col.4 lines 65-67.* The "history buffer" cited in Yukutomo records interactions directed to numerical control apparatuses, which are automated machining equipment. Furthermore, there is nothing in the cited reference that discloses logging "real time interactions," but instead merely discusses "change detection means," without any clarity or explanation as to when the changes are detected relative to when they occur.

230.   Claims 1-3, 5, 6, 9, 10, 14 and 16 also require, "a tracking component to aggregate the real time interactions to facilitate generation of audit data relating to the one or more industrial control components." The tracking component aggregates such interactions in a file or record stored locally or remotely in a useful way that allows them to be audited. However, Yukutomo's ring buffer, cited by Hooper as allegedly anticipating the indicated claim elements, merely comprises a temporary storage mechanism, and does not disclose the claimed "aggregate the real time interactions to facilitate generation of audit data," as recited by the claims. In addition, the "ring buffer" does not relate to "industrial control components" as required by the invention.

231.   Claims 2-3, 5 and 6 require, "at least one of the recording component and the tracking component are associated with an access tool that interacts with the one or more industrial control components via a network." The access tool disclosed in the '974 patent includes an editing tool, programming tool, communications component, and/or monitoring component. *Col 4 lines 59-64.* However, the cited Yukutomo reference merely discusses

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connecting its history buffer with an external memory (e.g., hard drive), and does not provide

any disclosure of an access tool interacting with an industrial control component, let alone an

access tool that includes any recording or tracking components. The "external memory unit" is

simply a storage device and is not an "access tool" as disclosed in the invention.

232.   Claim 3 requires, "the access tool includes at least one of an editing tool, a

programming tool, a communications component, a monitoring component, a maintenance

component, a browser, a graphical user interface (GUI), and a database application that interacts

with the one or more industrial components." However, the cited Yukutomo reference merely

discusses connecting its history buffer with an external memory (e.g., hard drive), and does not

provide any disclosure of an access tool interacting with an industrial control component.

Furthermore, Hooper has indicated, without cite, that "One of ordinary skill would have

understood that the analysis Yukutomo describes at the 'external memory unit 8' could have been

via a browser, a GUI or a database application according to their known functions and with

predictable behavior." (Hooper Dec., ¶ 494) I disagree. I think that a PHOSITA would not have

associated these features with the external memory unit of Yukutomo's system. In that regard, an

undefined external memory unit fails to anticipate or render obvious at least the claimed "access

tool," let alone one that "includes at least one of an editing tool, a programming tool, a

communications component, a monitoring component, a maintenance component, a browser, a

graphical user interface (GUI), and a database application," as recited by claim 3.

233.   Claim 5 requires, "the network includes at least one of a local factory network, a

wireless network, and a public network." Hooper argues that the "personal computer,"

"numerical control apparatus," and "programmable machine controller" of Yukutomo disclose

the claimed "local factory network." I disagree because Hooper has merely pointed to devices or

machines, and assumed the existence of some factory network based merely on the potential coexistence of those devices.

234.   Claim 6 requires that "the recording component logs interaction data that has been directed to the one or more industrial control components during a current application session associated with the access tool." Hooper suggests, without cite, that "In Yukutomo, a recording component that logs real time interactions ... and the recording component logs 'data' generally and 'interaction data' specifically." (Hooper Dec. ¶ 504). However, I believe this is inadequate to anticipate or render obvious all the elements of claim 6. First, there is no discussion anywhere in Yukutomo, nor has Hooper made any allegation, of any "application session," let alone " a current application associated with the access tool," as recited by the claim. Second, I believe Hooper's reference, without citation, to logging data in general in Yukutomo is inadequate to support anticipation or obviousness of all aspects of the claim elements recited above.

235.   Claims 9-10 require, "the tracking component aggregates activities logged by the recording component in at least one of a local storage and a remote storage." Hooper cites Yukutomo's ring buffer as allegedly disclosing these components. I disagree because the temporary storage of data by Yukutomo's buffering scheme fails to anticipate or render obvious at least the claimed "aggregates activities logged by the recording component."

236.   Claim 10 requires, "the tracking component aggregates transaction data by creating at least one of a file, schema, and a data structure in the local or remote storage locations, and tags the file, schema, and data structure with an identifier relating to the one or more industrial control components that have been accessed." Hooper references the ring buffer system in Yukutomo, whereby a plurality of storage elements are annularly connected. However, there is no discussion anywhere in Yukutomo, nor has Hooper made any allegation, of

any "tags," let alone, "tags the file, schema, and a data structure with an identifier relating to the one or more industrial control components that have been accessed," as recited by claim 10. Yukutomo's temporary ring buffer is likely agnostic to from where information stored on was derived. Further, thre is no indication of any tag or other identifier associated with any numerical control apparatuses, let alone industrial control components, from which its data may have originated. Finally, Yukutomo's ring buffer performs no aggregation of transaction data, but instead temporarily stores raw keystroke and signal data. There is no discussion of aggregating transaction data into "at least one of a file, schema, and a data structure," as recited by the claim.

237. Claims 14 and 16 require, "at least one of the recording component and the tracking component are employed to generate an audit report that describes interactions that have occurred with the one or more industrial control components." Hooper cites the display screen in Fig. 5 of Yukutomo as allegedly disclosing report generated by these alleged recording and tracking components. I disagree because there is no indication that aspects of Yukutomo pointed to by Hooper as allegedly teaching the claimed "recording component" and "tracking component" also "are employed to generate an audit report."

238. Claim 16 requires, "the audit report includes 1 to N fields, N being an integer, the fields displaying various types of auditing information." Hooper has cited the history data shown in Fig. 5 of Yukutomo, specifically referencing the numbering from 1 to 30 as allegedly teaching the claimed "1 to N fields." However, Yukutomo's history data is numbered according to each individual data entry, where each entry has only a single field such as a single keystroke. Yukutomo does not discuss, nor has Hooper alleged, any "1 to N fields," let alone "1 to N fields ... displaying various types of auditing information," as recited by claim 16.

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239.   Claim 24 requires, "tagging at least one file that is related to the one or more control components." Hooper points to Fig. 4 of Yukutomo as allegedly disclosing tags. However, Fig. 4 of Yukutomo merely shows possible data formatting for stored history data. Formatting of data records in a database is distinct from, and does not anticipate or render obvious, "tagging at least one file," as recited by the claim.

240.   Claim 24 also requires, "aggregating the logged activity data in the at least one file." Hooper's reference to Yukutomo's "external memory unit" is inadequate to anticipate or render obvious this claim element. Not only does Yukutomo make no mention of files, but the mere use of memory or data storage facilities does not imply data configured in any file format. Finally, there is no indication of any data being aggregated in Yukutomo's system, and Hooper's suggestion that the mere storage of data itself constitutes such aggregation is over-generalized and unsubstantiated.

241.   Claim 29 requires, "A computer readable medium having stored thereon a data structure." Hooper argues this limitation is disclosed by the external memory unit 8 of Yukutomo's system. However, Yukutomo does not address data structures that are stored on a computer readable medium.

242.   Claim 29 also requires, "a first data field representing real time access data to an industrial component." Hooper argues the time data 104 shown in Fig. 4 of Yukutomo discloses this limitation. However, Yukutomo indicates that this time-of-day data is merely a reading supplied by a clock timer whenever a signal is input to Yukutomo's operation history monitoring system. Such notation of clock time does not anticipate or render obvious the claimed, "real time access data," recited by claim 29. Real time access data refers to some value related to

interaction with the industrial control component, rather than merely the time that a recording was made.

243.   Claim 29 also requires, "a second data field representing a tag name to store and aggregate the real time access data." However, Yukutomo has no discussion of tagging in general, let alone of any data field representing a tag name.

Hooper's Analysis of the Cimplicity Reference

244.   Hooper makes a general allegation that Cimplicity "discloses every element of Claim[s] [1-3, 5, 6, 9, 10, 14-16, 24 and 29] of the '974 patent." (Hooper Dec., ¶¶ 476, 487, 492, 497, 502, 507, 512, 517, 522, 527, 542 and 577). I disagree.

245.   It is my opinion that Cimplicity does not anticipate or render obvious any of the asserted claims of the '974 patent.

246.   Claims 1-3, 5, 6, 9, 10, 14 and 16 require "a recording component to log real time interactions with one or more industrial control components." Hooper points to Cimplicity's alarms as real time interactions being logged. (Hooper Dec., ¶ 482) However, Cimplicity's alarms, and its security audit trail in general, are directed only to Cimplicity project activities, and not to interactions with an "industrial control component[]." For example, Cimplicity explicitly states, "The Security Audit Trail lets you monitor user actions <u>in your project</u>" (p. 28-3, emphasis added). Furthermore, none of the alarms discussed in Cimplicity appear related to "interactions with one or more industrial control components." Rather, they appear related only to data within Cimplicity's internal server data structure. Cimplicity's Security Audit Trail is designed to track activities in a project and identify users committing unauthorized activities with respect to that project. It is not, however, directed to the claimed, "log real time interactions with one or more industrial components," as recited by the claims.

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247.   Claims 1-3, 5, 6, 9, 10, 14 and 16 also require, "a tracking component to aggregate the real time interactions to facilitate generation of audit data relating to the one or more industrial control components." Hooper points to Cimplicity's logging of alarm data in "the Event Log table of Database Logger." (Hooper Dec., ¶ 485). However, the mere recording of Cimpicity's internal alarms is insufficient to anticipate or render obvious the indicated claim elements related to tracking interactions with external industrial control components.

248.   Claim 5 requires, "the network includes at least one of a local factory network, a wireless network, and a public network." Hooper argues that the open database connectivity (ODBC) protocols used by Cimplicity's Data Logger disclose the claimed "access tool," and that, "One of ordinary skill in the art would understand ODBC ... supports both local and network connections to the database." (Hooper Dec. ¶ 500). I disagree with this characterization of the understanding of a PHOSITA in regard to the network topology disclosed in the Cimplicity reference. The cited ODBC connections refer to data exchanges only among Cimplicity's server and viewer computers, and not with the externally-connected industrial control components. Furthermore, Hooper's vague obviousness argument fails to explain why a PHOSITA would have any reason, teaching, suggestion or motivation to modify or combine the cited references, or why the aspects alleged to be obvious would have presented themselves to a PHOSITA in the context of the claim as a whole. Hooper also fails to explain how or why a PHOSITA would have selected and combined those prior art elements in the normal course of research and development to yield the claimed invention. In any case, the unsupported allegation that ODBC enabled systems can access local or remote networks on industrial controllers fails to anticipate or render obvious the elements of the claim as set forth above, particularly in their context with reference to the claim as a whole.

249.   Claim 6 requires that "the recording component logs interaction data that has been directed to the one or more industrial control components during a current application session associated with the access tool." Hooper suggests, without cite, that "The Cimplicity commercial system includes a recording component that logs real time interactions ... [and] [t]he recording component logs 'data' generally and 'interaction data' specifically." (Hooper Dec. ¶ 505). However, I believe this is inadequate to anticipate or render obvious all the elements of claim 6. First, Hooper has made no allegation of any "application session," let alone "a current application associated with the access tool," as recited by the claim. No indication of session tracking has been cited in Cimplicity. Second, I believe Hooper's reference, without citation, to logging data in general in Cimplicity is inadequate to support anticipation or obviousness of all aspects of the claim elements recited above.

250.   Claims 9-10 require, "the tracking component aggregates activities logged by the recording component in at least one of a local storage and a remote storage." Hooper cites Cimplicity's ODBC connectivity as allegedly disclosing these components and that, "One of ordinary skill in the art would understand ODBC ... supports both local and network connections to the database." (Hooper Dec. ¶ 510). I disagree with this characterization of the understanding of a PHOSITA within the context of claim(s) on which this claim depends. Furthermore, Hooper's vague obviousness argument fails to explain why a PHOSITA would have any reason, teaching, suggestion or motivation to modify or combine the cited references, or why the aspects alleged to be obvious would have presented themselves to a PHOSITA in the context of the claim as a whole. Hooper also fails to explain how or why a PHOSITA would have selected and combined those prior art elements in the normal course of research and development to yield the claimed invention.

251.   Claim 10 requires, "the tracking component aggregates transaction data by creating at least one of a file, schema, and a data structure in the local or remote storage locations, and tags the file, schema, and data structure with an identifier relating to the one or more industrial control components that have been accessed." However, the cited Cimplicity reference does not disclose recording or tracking interactions with industrial control components. The cited features refer to tracking of interactions with Cimplicity itself without regard to effect on the connected controllers. Further, Hooper references the Alarm Sound Manager discussed at p. 11-5 in Cimplicity (see Hooper Dec., ¶ 515). However, Cimplicity's Alarm Sound Manager is merely a tool that "plays sounds and displays alarm information when alarms are generated by those [connected] projects." There is no indication of any aggregation of transaction data, creation of files, schema or data structures, or tagging in the cited portions of Cimplicity.

252.   Claims 14 and 16 require, "at least one of the recording component and the tracking component are employed to generate an audit report that describes interactions that have occurred with the one or more industrial control components." Hooper cites the Database Logger and its ability to write a report to a database, as discussed at p. 16-49 of Cimplicity, as allegedly disclosing these components. Hooper cites the Database Logger and its ability to write a report to a database, as discussed at p. 16-49 of Cimplicity, as allegedly disclosing these recording and tracking components. However, as noted previously, none of the information logged by Cimplicity's Database Logger appears related to "interactions with one or more industrial control components."

253.   Claim 16 requires, "the audit report includes 1 to N fields, N being an integer, the fields displaying various types of auditing information." Hooper's citation fails to disclose this element.

254.   Claim 24 requires, "monitoring activity data directed to one or more control components." Hooper points to the alarms discussed in Cimplicity. However, the cited Cimplicity reference fails to anticipate or render obvious at least the elements above because, as noted previously, the alarms in Cimplicity's system are not based on activities "directed to one or more control components." Cimplicity's alarm functions are based on interactions with elements contained within a Cimplicity itself, and only with the access obtained to them by various users.

255.   Claim 24 also requires, "tagging at least one file that is related to the one or more control components." Hooper points to the databases used in Cimplicity and suggests that "One of ordinary skill in the art understands databases are composed of one or more files having 'tags' that identify them." (Hooper Dec., ¶ 551). However, no indication was cited in the Cimplicity reference, nor indeed in Hooper's report, of any "file that is related to one or more control components."

256.   Claim 24 also requires, "aggregating the logged activity data in the at least one file." Hooper points to the databases used in Cimplicity and suggests that "One of ordinary skill in the art understands databases are composed of one or more files." (Hooper Dec., ¶ 557). Hooper appears to be making a vague obviousness argument, but fails to explain why a PHOSITA would have any reason, teaching, suggestion or motivation to modify or combine the cited references, or why the aspects alleged to be obvious would have presented themselves to a PHOSITA in the context of the claim as a whole. Hooper also fails to explain how or why a PHOSITA would have selected and combined those prior art elements in the normal course of research and development to yield the claimed invention.

257.   Claim 29 requires, "a first data field representing real time access data to an industrial component." Hooper argues the time stamp discussed at pp. 16-54 and 16-56 of

Cimplicity discloses this limitation. However, Cimplicity is explicit that this time stamp is "of

the *previous* time the point was logged" (Cimplicity, 16-56, original emphasis). Such time data

does not anticipate or render obvious the claimed, "real time access data to an industrial

component," as recited by claim 29.

258.   Claim 29 also requires, "a third data field to categorize the real time access data."

Hooper argues that the _ALRM attribute on p. 16-56 of Cimplicity discloses these limitations.

However, the cited portion of Cimplicity merely states that a report may have a column for each

attribute, including the _ALRM attribute. However, merely having a column of data in an output

report does not say anything about the structure of fields in any underlying data structure in

which the reported data is embodied. In particular, there is no indication in Cimplicity of any

"third data field to categorize the real time access data," let alone a data structure comprising this

and the other two fields recited by the claim.

259.   In my opinion, the Cimplicity reference, as cited by Hooper, fails to disclose each

and every element of any of the asserted claims of the '974 Patent and/or does not sufficiently

describe the claimed invention to have placed the public in possession of it. A PHOSITA at the

time of the invention could not have combined the Cimplicity reference with his own knowledge

to make the claimed invention.

260.   In my opinion, the Cimplicity reference relied upon by Hooper does not contain

any disclosure sufficient to enable a PHOSITA to practice the inventions claimed in the '974

patent without undue experimentation. The citations to the Cimplicity reference contain no

substantive representation of the claimed invention, in such full, clear, and exact terms as to

enable a PHOSITA to make, construct, and practice the invention. The citations, if anything, are

vague and ambiguous as to the presence or description of the claim elements and thus do not suffice for anticipation.

II.   SUPPLEMENTATION

I understand that discovery from the defendants is incomplete and ongoing. I reserve the right to revise, supplement, or amend my opinions contained in this report in light of any additional information that I might receive on or after the date of this report including, but not limited to, reports submitted by other experts in this lawsuit.

Dated: March 23, 2012

Arthur Zatarain, PE

EXHIBIT A

List of Materials Considered

1.   I have reviewed a number of materials, including all of the materials set forth in my

Opening Expert Report and Supplement.

2.   I have studied the patents in suit and their respective prosecution histories.

3.   I have reviewed the Hooper declaration and the documents upon which it relies upon.

4.   I have reviewed the file wrappers for the Chuo, Stripf, Li, and Yukutomo references.

5.   I have reviewed the documents cited in my rebuttal report.